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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/605,227	06/28/2000	Yutaka Kuba	81870.0009	6219

26021 7590 08/12/2003

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EXAMINER

PAK, SUNG H

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/605,227

Applicant(s)

KUBA, YUTAKA

Examiner

Sung H. Pak

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2874

DETAILED ACTION

Applicant's amendment filed 5/28/2003 has been entered. All pending claims have been carefully reconsidered in view of the amended limitations provided in the applicant's amendment. In view of the amended limitations, the previous ground of rejection is withdrawn. However, the pending claims are still unpatentable. Therefore, a new ground of rejection is furnished in this office action. Applicant's remark provided in the amendment has been carefully reviewed by the examiner, but the arguments set forth are deemed moot in view of the new ground of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beckwith (US 5,615,292) in view of Carney (US 4,466,696).

Beckwith was cited in the prior office action.

Regarding claims 1-4, 7-11, 13-16, 18, 22, 24, Beckwith discloses a fiber optic terminator module with all the limitations set forth in the claims, except it does not teach the use of substrates having grooves and an optical fiber fixed in the groove. Beckwith teaches the use of fiber holding portion on one end of the optical packaging and a free-

Art Unit: 2874

standing optical devices mounted on the substrate for coupling optical fibers and optical devices (Fig. 4b).

Specifically, Beckwith discloses: first and second substrates, the first substrate having an electrical connection terminals ("6" in Figs. 3, 4b); the second substrate having an optical receiver, optical transmitter and optical signal processing circuits ("9,10,11,12" in Fig. 4b); ends of optical fibers being fixed onto the substrate aligned with the optical transmitter and receiver (Fig. 4b); protector cover formed for protecting optical components (Fig. 1 and column 2 lines 31-41); a connector adapted for mating with the electrical connection terminal having a reception space having a spring connection arrangement that leads to the electric circuit board ("7" in Fig. 4b).

Carney, on the other hand, explicitly teaches the use of optical packaging substrates with v-grooves for mating optical fibers with optical transceiver devices, wherein the optical transceiver device is completely provided on the main surface of the substrate, and the optical fiber, especially the portion immediately adjacent to the device, is fixed in the groove. Such a use of substrate grooves for optical packaging is commonly used in the art, and it is advantageous over the prior art devices because it provides an accurate alignment between the optical fibers and optical devices. Improved alignment minimizes optical coupling loss and improves the system performance. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beckwith device to use a substrate having a groove and an optical fiber fixed in the groove.

Art Unit: 2874

Regarding claims 5-6, Beckwith discloses a fiber optic connector module with all the limitations set forth in the claims, as discussed above, except it does not teach the use of planar waveguide circuit. However, such planar waveguide circuit is well known and commonly used in the art. Such planar waveguide circuits provide a well known advantage of being compact and energy efficient. Therefore, it would have been obvious to a person of ordinary skill in the art to modify Beckwith device to have planar waveguide circuit. It would have been desirable to have a compact and energy efficient optical circuit.

Regarding claims 12, 17 and 28, Beckwith discloses a fiber optic connector module with all the limitations set forth in the claims, as discussed above, except it does not teach the use of connector body being made of a material having a thermal conductivity higher than the first base member. However, such casing material is well known and commonly used in the art. It provides a well known advantage of providing an effective means for heat sink. Therefore, it would have been obvious to a person of ordinary skill in the art to modify Beckwith device to have the connector body made of a material having a higher thermal conductivity. It would have been desirable to have a connector with effective heat sink means.

Regarding claims 21, 23, and 29, Beckwith discloses a fiber optic connector module with all the limitations set forth in the claims, as discussed above, except it teaches the use of a plastic casing material instead of a ceramic material as claimed in the instant application. However, the use of ceramic casing material is well known and commonly taught in the optical device packaging art. Ceramic casing material provides

Art Unit: 2874

a well known advantage of being an efficient electrical insulator and a good thermal conductor. Such characteristics allow for efficient and durable optical communications device. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Beckwith device to have a ceramic casing.

Remarks

Applicant's arguments regarding the patentability of pending claims have been carefully reviewed. However, they are deemed moot since Miura et al reference is no longer used in the new ground of rejection. A new ground of rejection was provided in view of the newly added limitations.

The pending claims are amended to recite 1) an optical element that is completely provided on the planar main surface, and 2) the light transmitter portion that is immediately adjacent to the optical element is fixed in a groove. The examiner respectfully point out that these limitations are not patentable over the prior art, as discussed in this office action. Please refer to Claim Rejections sections of this office action.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

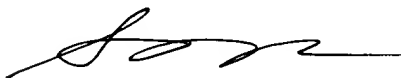
Art Unit: 2874

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (703) 308-4880. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.


The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Sung H. Pak
Examiner
Art Unit 2874

sp
August 5, 2003



HEMANG SANGHAVI
PRIMARY EXAMINER